

DECISION



THE COMPTROLLER GENERAL
OF THE UNITED STATES
WASHINGTON, D. C. 20548

60124

FILE: B-183182

DATE: November 6, 1975

MATTER OF: Sperry Univac; Control Data Corporation

97774

DIGEST:

Agency's determination that benchmark tests required by RFP for award of ADP system must be performed by offerors within stated guidelines is justified where record shows that changes to guidelines as proposed by protester would invalidate testing results and would adversely impact useability of proposed system. Moreover, allegation that other offerors proposed similar changes to benchmark guidelines is without merit based on independent GAO evaluation of such other proposals.

Sperry Univac (Univac) has protested the rejection of its proposal under solicitation No. CDPA-74-6, issued by the General Services Administration (GSA), Automated Data and Telecommunications Services, ADP Procurement Division. In addition, Control Data Corporation (CDC), another of the three offerors responding to this solicitation, has protested the determination that the proposal of International Business Machines Corporation (IBM), the remaining offeror on this procurement, was technically acceptable. For the reasons set forth below, both protests are denied.

The solicitation was issued by GSA on April 24, 1974, to acquire a large scale scientific computer system to be installed at the Harry Diamond Laboratories (HDL) in connection with the United States Army Computer Systems Support and Evaluation Command Project No. T-004-73 (HDL). The RFP specified that each offeror, to be eligible for award, had to successfully perform a set of benchmark problems within guidelines stated in the RFP. The RFP stated that the purpose of the benchmark problems was to enable the user to determine if the proposed system(s) could perform the workload within the necessary time constraints and also to measure relative performance of the proposed systems.

Certain of the benchmark programs and subprograms were written in ANS FORTRAN and COBOL, which are described by GSA as "higher level source languages employed for the purpose of carrying instructions to the computer." With regard to such benchmarks, it was stated in paragraph 3.1 of Attachment 2, Section F of

the RFP that in preparation for performing the benchmark, "Suppliers must document all changes made to the FORTRAN and COBOL source programs." Paragraph 3.1.2 of the same attachment further stated that "Substitution of subprograms in the benchmark programs is not permitted. However, suppliers can substitute their equivalent FORTRAN or COBOL statements where ANS FORTRAN or COBOL has not been used." (Underscoring supplied.) The protests involve the requirements of these paragraphs.

As indicated, three offerors, Univac, CDC and IBM, responded to this solicitation on September 9, 1974. In accordance with the provisions of the Federal Property Management Regulations (FPMR), which are applicable when GSA procures ADPE for another agency, see FPMR 101-32.405, technical evaluation of the proposals was performed by the U.S. Army Computer Systems Support and Evaluation Agency and the evaluation findings were transmitted to GSA.

By letter dated October 18, 1974, the GSA contracting officer furnished Univac with a list of technical deficiencies which the Army had noted in the Univac proposal. In addition, Univac was advised of the need to schedule the benchmark testing. In this connection, the Army technical evaluators had noted that in preparing to perform the benchmarks, Univac had changed certain of the ANS FORTRAN statements. These changes were considered to be a violation of specification paragraph 3.1.2, and were included in the list of deficiencies furnished to Univac. In particular, Army noted that Univac's proposed use of "assembler language I/O [input/output]" in lieu of standard ANS FORTRAN I/O statements to perform benchmark program "TOODY" was unacceptable.

By letter of November 13, 1974, to GSA, Univac explained that the changes to the benchmark programs were made "solely for the purpose of enabling the execution of these programs in the context of the current system architecture and operating philosophy of the Univac system proposed." Univac offered to perform a functional demonstration to show that it could accomplish "the mission that HDL must perform to support the goals of the U.S. Army."

On November 22, 1974, the Army advised GSA that "Documentation submitted on 13 Nov. 74 by UNIVAC associated with benchmark TOODY remains deficient because standard FORTRAN statements were changed." Univac, however,

continued to maintain to GSA that its proposed changes to the benchmark programs were acceptable and within the specifications. It again requested the opportunity to provide the Government with a "live demonstration" benchmark test.

By letter dated December 6, 1974, GSA requested the Army to provide it with the rationale behind the requirement of RFP paragraph 3.1.2. On December 27, 1974, the Army supplied GSA with the requested rationale. Thereafter, on January 7, 1975, GSA notified Univac of the deficiencies in its proposal. (In addition to paragraph 3.1.2, one other deficiency was listed. This deficiency was corrected by Univac, thus leaving the benchmark documentation as the only unresolved technical area.) However, Univac's proposed correction of the benchmark deficiency was determined technically unacceptable by the Army, and on January 29, 1975, GSA advised Univac that its proposal was rejected. Univac promptly filed a protest to this Office.

Univac argues that paragraph 3.1.2 of the RFP as interpreted by the Army is unduly restrictive of competition because it precludes any changes in ANS FORTRAN statements supplied for the TOODY benchmark test program. Univac maintains that its latest proposal of January 22, 1975, should have been accepted. It notes, first, that paragraph 3.1.1 of the RFP specifically allowed changes "to permit compilation and/or execution of the programs," and that Univac inserted statements solely as required to execute the benchmark programs; and second, that ANS requirements themselves do not specify the size of an array which a system must accommodate. Therefore, Univac contends that the statements it inserted into the benchmark program were completely in accordance with ANS requirements and represented an implementation option or technique of program conversion which was allowable. In Univac's view, the Army's interpretation of paragraph 3.1.2 has negated the clear meaning of paragraph 3.1.1, serves no useful purpose, and excluded from the competition anyone but the prior sources, thus favoring "CDC for whose 6600 system the statements were originally written at Government expense; and IBM, for whose 360/195 system they were subsequently rewritten, at Government expense."

Furthermore, Univac insists that some changes were allowed by Army in those vendors' benchmark programs but that the vendors were not disqualified. Thus, Univac contends that the Army violated the principle of equal treatment since IBM and CDC were allowed to make changes to ANS statements, while Univac was not.

In justifying its rejection of the Univac proposal, the Army insists that acceptance of the Univac program changes (1) would distort the concept of establishing a uniform benchmark, since the other offerors were to be timed using the standard ANS FORTRAN statements; (2) would inhibit the interchangeability of the resulting programs for use on a variety of ADP systems and; (3) would have a severe impact on other areas of Army operations.

Specifically, with regard to the benchmark the Army explains that:

"(2) Program TOODY, together with the other 9 benchmark programs, have been used (in present form) to establish the throughput relationship required to process the total HDL workload that is documented and well defined in Attachment 1 to Section F. Specific reasons as to why all proposed systems must process TOODY as provided are as follows:

"Benchmark program TOODY is representative of a class of programs requiring relatively large amounts of core storage and significant I/O activity. Among all the benchmark programs, this sample run is by far the most I/O bound job. Production problems for TOODY can require approximately twice the storage used in this sample run and current production running times vary from 15 hours to 100 hours. Since the RFP has no requirement for expansion of main memory, the processing of TOODY (as provided) demonstrates that each proposed system has sufficient capability to satisfy the production problems for TOODY and the other large size programs which it represents.

"(3) Since TOODY is the largest I/O bound program in the HDL benchmark job stream, the UNIVAC substitution of standard FORTRAN I/O statements with assembler language subprograms upsets the representativeness of the benchmark job system and negates the intended use of TOODY. This substitution also destroys the purpose of establishing a common base for measuring relative performance, since the other suppliers were timed using the standard I/O statements.

"(4) In addition, the addressing technique (via assembler language) used in TOODY was developed by UNIVAC personnel. As noted * * * above, the purpose of the benchmark is to demonstrate the capability of the proposed system, not to demonstrate the ability of the supplier's programming staff."

As for interchangeability, Army states as follows:

"b. Other Technical Considerations

"(1) The Substitution of assembler language for ANS FORTRAN not only violates the RFP, but also violates the spirit of AR 18-1 which states that ANS FORTRAN is designated as the Army Standard Programming Language (ASPL) for use in scientific applications.

"(2) Special written assembler language subprograms (apparently written specifically for TOODY) are being used by UNIVAC to execute the benchmark. HDL, as an Army R&D installation, operates as a service center for HDL and shares software within the scientific community. The machine dependency of assembler language inhibits the interchangeability of programs and also impacts the objective of ANS FORTRAN which prompts a high degree of interchangeability of FORTRAN programs for use on a variety of ADP systems."

Finally, regarding to the impact of the proposed Univac changes, Army states that:

"3. Impacts

a. HDL performs primarily scientific computing. Staff scientists, while experts in their field, perform minimal application software development involving large programs. These large programs are obtained from various ADP libraries within the scientific community. The use of these programs constitutes a significant portion of the HDL workload. The staff scientist selects the program to perform his calculation based upon the technical requirement at hand. He is usually unaware of the program size since this parameter is irrelevant to the technical problem. This procedure provides maximum utilization of software

within the scientific community and frees the HDL scientist from programing details so that he can focus his attention on the technical aspects of his application. Programs that are a part of the current HDL workload and which have been obtained by the above procedure include TOODY, USRHYD, SANDYL, TEMPER, NET-2, SCEPTRE, and CIRCUS-2.

b. Implementation of TOODY and other programs of similar size on proposed UNIVAC ADPE in the HDL environment would impact:

- (1) Sharing of programs with other agencies.
- (2) Army programing policy since the use of assembler language programing is officially discouraged.
- (3) General purpose usage of these type programs.
- (4) Program documentation.
- (5) Army objective for designating FORTRAN as the ASPL for use in scientific and engineering types of systems.
- (6) Processing of large size application programs since the proposed system would only provide responsive support for small to medium size application programs.
- (7) Processing of classified data. Many of the large size applications involve classified data and as a result of (6) above, these large size applications may have to be satisfied by outside arrangements.

In response to Univac's allegation that the procurement was restricted to an incumbent supplier, the Army reports that the ADPE for this procurement will replace the Government-owned IBM 1401/7094 at HDL and also the services being received under contract from outside computers (including IBM, CDC and Univac computers) plus eight commercial time-sharing agencies. Of the total HDL workload, about 95 percent is being satisfied by these

service contracts, with the remainder of the work by the IBM 1401/7094. In Army's view, this mixture of computer services shows that there is no single incumbent supplier associated with the HDL workload.

Univac has furnished our Office with a rebuttal to the GSA/Army position relative to its proposed TOODY changes. For example, Univac notes that it made "identical changes to other benchmark programs, such as TEMPER, and these were allowed." However, the Army explains that "Univac's implementation of TEMPER involved insertions of assembler language subprograms whereas implementation of TOODY involved substitutions of assembler language for standard FORTRAN statements * * *. In other words, assembler language code was added to TEMPER and assembler language code replaced standard FORTRAN in TOODY."

Basically, it is the protester's position that the insertion of its statements into TOODY inhibits neither the interchangeability of the program nor the objectives of ANS FORTRAN, as Univac would be committed to perform at no additional cost conversion and maintenance effort and to guarantee the operational status of program for the life of the system. On the other hand, as indicated above, the Army views the Univac implementation as unacceptable because the changes proposed are based on "Univac assumption about the values of the array subscripts and apparently required knowledge of the program logic. These software changes are not for general purpose usage and impacts the generality of the program since its most useful feature is the ability to change problem size (input data) by changing a dimension within the program."

At this point it should be noted that CDC, the other protesting party before our Office, agrees with GSA/Army that Univac's proposal was unacceptable because of its proposed changes to the ANS FORTRAN statements in TOODY. However, CDC joins with Univac in insisting that IBM also made unacceptable changes in the FORTRAN statements which it submitted to the Army. In addition, Univac charges that CDC also made changes in its benchmark program but was not disqualified for this reason.

Because of the technical nature of the allegations raised in those protests and since each offeror had access only to its own proposal, we conducted an independent review of the changes documentation

provided by the three offerors to the Army. We have concluded that Univac's implementation of TOODY involved a substantial number of changes to ANS FORTRAN statements and a substitution of assembler language subprograms. While paragraph 3.1.1 of the RFP allowed limited changes to permit compilation or execution of the programs, it is our opinion that paragraph 3.1.2 clearly prohibited changes to the ANS FORTRAN statement. Moreover, the record shows that Univac repeatedly was advised of the prohibition contained in paragraph 3.1.2 during the extensive discussions which were conducted following the submission of technical proposals.

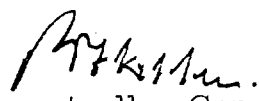
We believe that the GSA/Army determination that the Univac proposal was not acceptable is supported by the record. Although Univac contends that the rejection of its proposal was unjustified and unduly restrictive of competition, the Army has convincingly shown that the Univac system would not meet its needs. The fact that Univac has offered to provide the conversion and maintenance effort required to implement HDL programs on its proposed system for the entire system lifetime, does not satisfy the Army's needs for ANS FORTRAN capability as reflected in the benchmark requirement. Not only would the proposed Univac changes to the benchmark programs invalidate the benchmark test but the Army insists that the use of techniques such as proposed by Univac would inhibit the interchangeability of the resulting programs for other ADP system uses and would adversely impact other areas of its operations. We find no basis to disagree.

Based on our review, we believe that the offerors were equally treated in the evaluation of proposals. Our review indicates that there were two instances in which IBM and one instance in which CDC had submitted statements in their benchmark programs which potentially changed the benchmark instructions in violation of the specifications. The first IBM statement change was a correction of a statement which was incorrect as originally provided by the Army to the offerors. Due to differing precision and word length idiosyncrocies of the computers of the other offerors, the error was not encountered by either CDC or Univac. The other IBM change involved a numerical quantity and was permissible since the range of precision of numerical quantities fell outside the purview of ANS FORTRAN. The CDC statement change was made in the original benchmark documentation submission. However, CDC removed the change and replaced the original statement prior to the live-test benchmark demonstration. In our opinion, none of the changes or statements made by IBM or CDC constitutes a violation of the RFP requirements.

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Univac also questioned the RFP evaluation criteria which it contends was predicated on a system use of one 8-hour shift per day. Apparently, this matter was resolved since the RFP was amended to clarify that evaluation was to be based on unlimited use of the system.

Finally, an award was made to IBM on October 20, 1975, while the protests were pending. The award was made by GSA pursuant to FPR 1-2.407-8(b)(4), based on findings that the ADP system being procured was (1) urgently required; (2) delivery and performance would be unduly delayed by failure to make award promptly; and (3) a prompt award would be advantageous to the Government. In view of our conclusion, we have no reason to object to the award.


Acting Comptroller General
of the United States